1. A method of performing time synchronization between a clock master having a first clock and a clock slave having a second clock, said method comprising the steps of:

sending a first message to the clock master, the first message comprising information indicating a first transmission time of the first message;

receiving a second message from the clock master, the second message comprising information indicating a first reception time of the first message and a second transmission time of the second message;

obtaining at the clock slave a second reception time of the second message;

calculating a transmission delay between the clock slave and clock master from the first and second reception times and the first and second transmission times; and

determining if the calculated transmission delay is within a window of acceptable delays and updating an accumulated delay with the calculated transmission delay if the calculated transmission delay is within the window.

2. The method of claim 1 further comprising repeating said first message sending step through said determining step until a termination condition is met.

3. The method of claim 2 further comprising synchronizing the second clock to the first clock using the accumulated delay.

4. The method of claim 3 wherein said synchronizing step comprises:

computing an average delay from the accumulated delay; and

applying the average delay as an offset to a time of the second clock.

5. The method of claim 4 wherein said average delay is computed by dividing the accumulated delay by a maximum number of times said first message sending step through said determining step are to be repeated.

6. The method of claim 2 wherein said method calculates a number of times said method executes said first message sending step through said determining step and terminates after said number of times equals a predefined number of times.

7. The method of claim 6 wherein said predefined number of times is twenty.

8. The method of claim 1 wherein said window is a sliding window such that thresholds of said window are adjusted whenever a minimum calculated transmission delay is obtained.

9. The method of claim 8 wherein the sliding window comprises a first threshold representing a best delay and a second threshold representing a maximum allowable difference from the best delay, wherein the best delay represents a calculated transmission delay with a smallest delay in comparison to other calculated transmission delays.

10. The method of claim 9 wherein said step of determining if the calculated transmission delay is within the window comprises:

determining if said calculated transmission delay is less than the best delay; and

if the calculated transmission delay is less than the best delay, storing the calculated transmission delay as the best delay, discarding the calculated transmission delay, resetting the accumulated delay and ensuring that said method executes said first message sending step through said determining step an additional number of times.

11. The method of claim 1 wherein said step of determining if the calculated transmission delay is within the window comprises:

determining if said calculated transmission delay is less than a best delay, wherein the best delay represents a calculated transmission delay with a smallest delay in comparison to other calculated transmission delays; and

if the calculated transmission delay is less than the best delay, storing the calculated transmission delay as the best delay, discarding the calculated transmission delay, resetting the accumulated delay and ensuring that said method executes said first message sending step through said determining step an additional number of times.

12. The method of claim 11 wherein said step of determining if the calculated transmission delay is within the window further comprises:

calculating a difference between said calculated transmission delay and the best delay;

determining if the calculated difference exceeds a maximum allowable difference; and

if the calculated difference exceeds the maximum allowable difference, discarding the calculated transmission delay, and ensuring that said method executes said first message sending step through said determining step an additional time.

13. The method of claim 1 wherein the first transmission and first reception times of the first message are generated using the second clock.

14. The method of claim 1 wherein the second transmission and second reception times of the second message are generated using the first clock.

15. The method of claim 1 wherein said step of calculating the transmission delay comprises:

calculating a round trip delay by taking a difference between the second reception time and the first transmission time;

calculating a clock master delay by taking a difference between the second transmission time and the first reception time; and

computing the transmission delay by halving a difference between the round trip delay and the clock master delay.

16. The method of claim 1 wherein the first and second clock are synchronous.

17. A method of performing time synchronization between a clock master and a clock slave, said method comprising the steps of:

receiving a first message from the clock slave;

sending a second message to the clock slave;

calculating a transmission delay between the clock slave and clock master from reception and transmission times of the first and second messages;

determining if the calculated transmission delay is within a window of acceptable delays and updating an accumulated delay with the calculated transmission delay if the calculated transmission delay is within the window.

18. The method of claim 17 further comprising repeating said first message receiving step through said determining step until a termination condition is met.

19. The method of claim 18 further comprising synchronizing a clock of the clock slave to a clock of the clock master using the accumulated delay.

20. The method of claim 17 wherein said window is a sliding window such that thresholds of said window are adjusted whenever a minimum calculated transmission delay is obtained.

21. The method of claim 20 wherein the sliding window comprises a first threshold representing a best delay and a second threshold representing a maximum allowable difference from the best delay, wherein the best delay represents a calculated transmission delay with a smallest delay in comparison to other calculated transmission delays.

22. The method of claim 21 wherein said step of determining if the calculated transmission delay is within the window comprises:

determining if said calculated transmission delay is less than the best delay; and

if the calculated transmission delay is less than the best delay, storing the calculated transmission delay as the best delay, discarding the calculated transmission delay, resetting the accumulated delay and ensuring that said method executes said first message receiving step through said determining step an additional number of times.

23. The method of claim 17 wherein said step of determining if the calculated transmission delay is within the window comprises:

determining if said calculated transmission delay is less than a best delay, wherein the best delay represents a calculated transmission delay with a smallest delay in comparison to other calculated transmission delays; and

if the calculated transmission delay is less than the best delay, storing the calculated transmission delay as the best delay, discarding the calculated transmission delay, resetting the accumulated delay and ensuring that said method executes said first message receiving step through said determining step an additional number of times.

24. The method of claim 23 wherein said step of determining if the calculated transmission delay is within the window further comprises:

calculating a difference between said calculated transmission delay and the best delay;

determining if the calculated difference exceeds a maximum allowable difference; and

if the calculated difference exceeds the maximum allowable difference, discarding the calculated transmission delay, and ensuring that said method executes said first message receiving step through said determining step an additional time.

25. A base station for use in a wireless telecommunications system comprising:

a clock; and

a controller, said controller for:

sending a first message to a clock master of said system comprising information indicating a first transmission time of the first message;

receiving a second message from the clock master comprising information indicating a first reception time of the first message and a second transmission time of the second message;

obtaining a second reception time of the second message;

calculating a transmission delay from the first and second reception times and the first and second transmission times; and

determining if the calculated transmission delay is within a window of acceptable delays and updating an accumulated delay with the calculated transmission delay if the calculated transmission delay is within the window.

26. The base station of claim 25 wherein said controller synchronizes said clock to a clock of the clock master using the accumulated delay.

27. The base station of claim 26 wherein said controller synchronizes said clock by:

computing an average delay from the accumulated delay; and

applying the average delay as an offset to a time of said clock.

28. The base station of claim 27 wherein said controller calculates a number of times it sends said first message and synchronizes said clock after sending the first message a desired number of times.

29. The base station of claim 28 wherein said desired number of times is twenty.

30. The base station of claim 25 wherein said window is a sliding window such that thresholds of said window are adjusted whenever a minimum calculated transmission delay is obtained.

31. The base station of claim 30 wherein said sliding window comprises a first threshold representing a best delay and a second threshold representing a maximum allowable difference from the best delay, wherein the best delay represents a calculated transmission delay with a smallest delay in comparison to other calculated transmissions delays.

32. The base station of claim 31 wherein said controller determines if the calculated transmission delay is within the window by:

determining if the calculated transmission delay is less than the best delay; and

if the calculated transmission delay is less than the best delay, storing the calculated transmission delay as the best delay, discarding the calculated transmission delay, resetting the accumulated delay and re-sending the first message an additional number of times.

33. The base station of claim 25 wherein said controller determines if the calculated transmission delay is within the window by:

determining if said calculated transmission delay is less than a best delay, wherein the best delay represents a calculated transmission delay with a smallest delay in comparison to other calculated transmission delays; and

if the calculated transmission delay is less than the best delay, storing the calculated transmission delay as the best delay, discarding the calculated transmission delay, resetting the accumulated delay and re-sending the first message an additional number of times.

34. The base station of claim 33 wherein controller further determines if the calculated transmission delay is within the window by:

calculating a difference between said calculated transmission delay and the best delay;

determining if the calculated difference exceeds a maximum allowable difference; and

if the calculated difference exceeds the maximum allowable difference, discarding the calculated transmission delay, and re-sending said first message an additional time.

35. The base station of claim 25 wherein the first transmission and first reception times of the first message are generated using said clock of said base station.

36. The base station of claim 25 wherein the second transmission and second reception times of the second message are generated using the clock of the clock master.

37. The base station of claim 25 wherein said controller is a programmed processor.

38. The base station of claim 25 wherein said controller is an application specific integrated circuit (ASIC).

39. The base station of claim 25 wherein said controller calculates the transmission delay by:

calculating a round trip delay by taking a difference between the second reception time and the first transmission time;

calculating a clock master delay by taking a difference between the second transmission time and the first reception time; and

computing the transmission delay by halving a difference between the round trip delay and the clock master delay.

40. The base station of claim 25 wherein said clock of said base station and the clock of the clock master are synchronous.

41. The base station of claim 25 wherein said telecommunications system is a CDMA system.

42. The base station of claim 41 wherein the clock master is a radio network controller.

43. A base station for a wireless telecommunications system comprising:

a clock; and

a controller, said controller for:

sending a first message to a clock master;

receiving a second message from the clock master;

calculating a transmission delay from reception and transmission times of the first and second messages;

determining if the calculated transmission delay is within a window of acceptable delays and updating an accumulated delay with the calculated transmission delay if the calculated transmission delay is within the window; and

synchronizing said clock to a clock of the clock master using the accumulated delay.

44. A base station of claim 43 wherein said window is a sliding window such that thresholds of said window are adjusted whenever a minimum calculated transmission delay is obtained.

45. A base station of claim 43 wherein the sliding window comprises a first threshold representing a best delay and a second threshold representing a maximum allowable difference from the best delay, wherein the best delay represents a calculated transmission delay with a smallest delay in comparison to other calculated transmission delays.

46. A telecommunications system comprising:

a clock master having a first clock; and

a base station comprising:

a second clock; and

a controller, said controller for:

sending a first message to said clock master comprising at least a first transmission time of the first message;

receiving a second message from said clock master comprising at least a first reception time of the first message and a second transmission time of the second message;

obtaining a second reception time of the second message;

calculating a transmission delay from the first and second reception times and the first and second transmission times;

determining if the calculated transmission delay is within a window of acceptable delays and updating an accumulated delay with the calculated transmission delay if the calculated transmission delay is within the window; and

synchronizing said second clock to said first clock using the accumulated delay.

47. A CDMA telecommunications system comprising:

a clock master having a first clock; and

a base station comprising:

a second clock; and

a controller, said controller for:

sending a first message to said clock master;

receiving a second message from said clock master;

calculating a transmission delay from reception and transmission times of the first and second messages;

determining if the calculated transmission delay falls within a window of acceptable delays, updating an accumulated delay with the calculated transmission delay if the calculated delay is within the window; and

synchronizing said second clock to said first using the accumulated delay.